

Remarks

Reconsideration of the application is requested in view of the amendments above, attachment hereto, and comments which follow.

Taking the matters raised by the examiner in turn, in relation to numbered sections 1 through 4 of the office action, the specification has been appropriately amended and headings have been added. Also, the drawings are appended hereto, and the examiner's statement that no drawings were furnished is puzzling. The present application was transmitted to the Patent and Trademark Office by the International Bureau and should have included everything, including the three sheets of drawings. In case the Patent and Trademark Office has lost the drawings, a duplicate set is appended hereto. The specification already had a brief description of the drawings, and that is now identified by the appropriate heading.

Regarding numbered paragraph 5, the Abstract has been recast to be a single paragraph and omit use of legal phraseology. The Abstract, on a separate page, is appended hereto.

In numbered section 7, objection was made to claim 7 because it was a multiple dependent claim depending upon another multiple dependent claim. Claim 7 has been amended to be singly dependent, and consideration of claim 7 is therefore believed to be in order.

In sections 8 and 9 of the office action, claims 1 and 2 have been rejected by the examiner under 35 U.S.C. §102 as being anticipated Bahai U.S. Patent Number 6,097,770. While the

indicated allowability of claims 3 through 14 in numbered section 10 of the office action is gratefully acknowledged, reconsideration of the rejection of claims 1 and 2 is requested.

Bahai et al disclose a method of frequency offset estimation induced by a transmission and actually not a method of obtaining an impulse response of channels that is the object of the invention. The object of Bahai et al is very different from the object of the invention.

It is true that Bahai et al use an estimation of impulse response in an intermediate processing step, with purpose of solving the problem of frequency offset. In distinction to the present invention, the method of Bahai et al estimates impulse responses from different sub-sets of symbols of a sync-word, the searches information (frequency offset) resulting from the phase differences between the estimates.

In column 2, lines 39 – 44 of Bahai et al, each filter forms a channel impulse response estimate of the communications channel. There is only one channel, it is the same for many communications. Because of the same channel, the channel impulse response doesn't change drastically from one symbol time to one or a few symbol times later. The method of Bahai et al, clearly pertains to one antenna signal as it can be seen in the sole A/D converter 205 of Figure 4.

As opposed to Bahai, the invention pertains to a plurality of channels, whenever they form a simple communication path. The invention relates to a technique whereby a receiver has

a plurality of antennas each associated with a different channel, see first paragraph of page 1 in the specification. The feature of the plurality of antennas is added in amended claim 1 to emphasize the difference between the invention and the prior art.

In column 5, lines 9 – 41 and column 6, lines 65 – 66 of Bahai et al, the channel impulse response is estimated at more than one symbol time. That is best interpreted as a time statistic of a communications channel but certainly not as a space statistic of a communication path, see page 8, lines 18 – 24 of the specification.

In column 7, lines 19 – 65 of Bahai et al, the vector H represents the impulse response of the channel. At the receiver, no space statistic is used in order to establish a corrected impulse response. The means of Bahai et al consist of an excitation of the channel with known samples in order to estimate the impulse response. The additive noise mentioned by Bahai et al is as in the present application, but there is no estimate of it.

In column 10, lines 19 – 22 of Bahai et al, the final estimate obtained when weighting estimates by the magnitude of corresponding element is not a corrected impulse response established by weighting estimates by means of a space statistic and an estimate of the additive noise of many channels, as presently claimed.

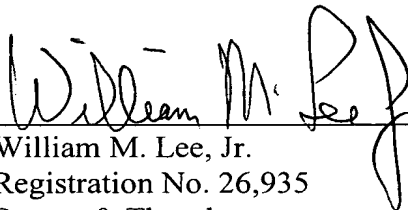
In view of the above, it is submitted that claim 1 is neither anticipated by, nor rendered obvious by , Bahai, and is allowable thereover. As claim 2 depends from claim 1, claim 2 is submitted to be allowable, as well.

Therefore, again the indicated allowability of the subject matter of claims 3 through 14 is gratefully acknowledged, but given the above, it is submitted that all claims are now in condition for allowance, and the examiner's further and favorable reconsideration in that regard is urged.

As this response is being sent during the sixth month following the examiner's office action, an appropriate petition for extension of time is also submitted herewith.

April 16, 2003

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "William M. Lee, Jr.", is written over a horizontal line.

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